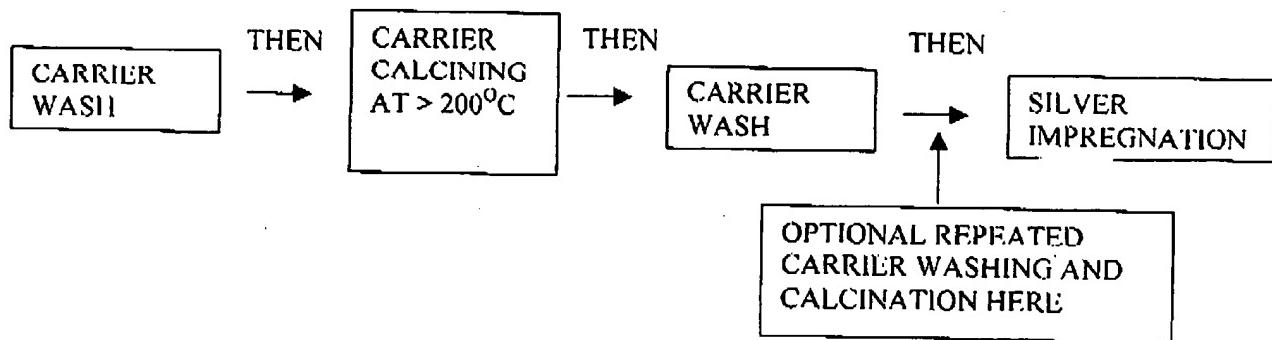


improvement achieved by this combination. It is further urged that the cited art fails to show the resulting carrier prepared by this process, and the resulting ethylene oxide catalyst formed by the claimed treatment. This may be shown graphically as follows:



No combination of cited prior art shows or suggests this sequence.

No combination of cited prior art shows or suggests the WASII-CALCINE-WASII sequence prior to silver impregnation.

Indeed the Takada reference relates to a silver catalyst for the production of ethylene oxide. However, Takadas fail to obviate the present invention. Takada teaches a procedure wherein their carrier is washed with water at 90°C, is then dried at 120°C, and then is deposited with a silver salt solution. A key feature of the present invention is that *prior to deposition of silver*, the carrier is washed, then calcined at above 200°C, and then washed again prior to deposition of silver. While the examiner is correct that Takada mentions multiple washing steps, it is urged that *nowhere* in Takada is it taught to conduct a calcination step at above 200°C in between two washing steps, as required by the present claims.

The fact that Takada et al. heats their the catalyst *after* deposition of the silver is in no sense anticipatory of the present invention. In fact, Takada's heating of the silver containing catalyst is to *remove organics and convert catalyst components to an active form*, neither of which concept is relevant to the wash - calcination - wash - silver impregnation sequence of the invention. Thus, Applicants urge that Takada fails to teach the claimed treatment procedure, and thereby

fails to achieve the improved results of the present invention.

The examiner concedes that Takada fails to disclose multiple washing and calcinating steps, as well as calcinating of the carrier at temperatures above 200°C, as required by the present invention. In an attempt to fill this void, the examiner cites Jin, et al for disclosing a heating of their carrier from 1450-1550 °C. However, the Jin calcinations temperature does not add to Takada, et al as the combination still does not suggest the wash - calcination - wash - silver impregnation sequence of the invention.

The examiner takes the position that it would have been "prima facie obvious" to one of ordinary skill in the art to have calcined a carrier at the temperatures disclosed in Jin, because "it is known to do so". Applicants disagree for several reasons. Even if the Jin, et al temperatures were hypothetically used as the Takada, et al drying temperatures, the wash - calcination - wash - silver impregnation sequence is still not done. Thus a hypothetical combination of Takada and Jin would still fail to obviate the present claims. Like Takada, the Jin reference also fails to suggest the wash — calcine — wash sequence which is a key feature of the presently claimed invention. *Indeed, Jin, et al fail to show any washing step at all.* While Jin, et al show ammonium fluoride, this is a component in their base carrier and not used in a washing step. Thus, since both references fail to disclose key wash — calcine — wash sequence of the present invention, it is submitted that one skilled in the art would not be inspired to formulate the present invention upon a combined reading of Takada and Jin. "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination." In re Geiger, 2 U.S.P.Q.2d 1276, 1278 (CAFC 1987). Applicants submit that there is no teaching or suggestion anywhere in either reference which offers any motivation for one skilled in the art to combine the teachings of Takada with the temperature ranges of Jin. Even if such were done, the invention has still not been reconstructed.

A showing of multiple washings by Takada, et al is insufficient to show the wash - calcination - wash - silver impregnation sequence.

A showing of temperatures used by Jin, et al is insufficient to show the wash - calcination - wash - silver impregnation sequence.

A combining of Takada, et al with Jin, et al is insufficient to show the wash - calcination - wash - silver impregnation sequence.

Furthermore, the Examiner's attention is respectfully directed to the examples of the original specification as filed. The examples show a comparison of carriers prepared according to the invention (Carriers A-1, A-2 and A-3 in Examples 1-7) to a different Carrier A (native carrier in Comparative Example 8) and Carrier A-4 (Comparative Examples 9-13) which was produced by a wash- wash- calcine process which would be analogous to Takada, et al but at higher temperatures such as those useful for the present invention. As one can clearly see by this comparative evidence, the wash - calcination - wash - silver impregnation sequence of this invention is clearly and unexpectedly superior.

For the above reasons, Applicants respectfully urge that the present claims are not obviated, and request that the 35 U.S.C. 103 rejection be withdrawn.

The examiner has rejected claims 12-13 under 35 U.S.C. 103 over Takada in view of Mross. Applicants respectfully urge that this ground of rejection is not well taken.

The arguments against Takada are repeated from above and apply equally here. In particular, Takada fails to disclose key features of the present claims, including the wash - calcination - wash - silver impregnation sequence, and calcinating of the carrier at temperatures above about 200°C, as required by the present invention. In an attempt to fill this void, the examiner cites Mross for teaching a washing of the carrier with aqueous solutions of carboxylic acids and alkaline earth metal salts.

Indeed Mross relates generally to the formation of ethylene oxide. However, it is submitted that there is no teaching or suggestion in either of Takada or Mross which would lead one skilled in

the art to combine these references in an effort to devise the presently claimed invention. It is again urged that the examiner is merely selecting and combining features from references where there is no suggestion in those references to do so.

While Mross does disclose the washing of a carrier material with aqueous solutions which may include carboxylic acids and alkaline earth metal salts, it does not teach or suggest anything which would inspire one skilled in the art to perform the wash - calcination - wash - silver impregnation sequence the present claims even in combination with Takada, et al. The Examiner appears to be going to great lengths to locate and try to interrelate references involving ethylene oxide formation , but no matter how one applies or combines these references they do not teach using the specific sequence of steps in the claimed invention to attained the demonstrated benefits.

It is further submitted that the combination of Takada and Mross would still fail to obviate the present claims. The combination of these references still does not teach the present claimed the wash - calcination - wash - silver impregnation sequcnce. The examiner incorrectly assumes that it would be obvious to one of ordinary skill to insert a calcination step at above 200°C between multiple washing steps of Takada. It is submitted that one skilled in the art would not be inspired to formulate the present invention upon a combined reading of Takada and Mross since both references fail to disclose key features of the present invention. Applicants therefore respectfully request that the 35 U.S.C. 103 rejection be withdrawn.

The undersigned respectfully requests re-examination of this application and believes it is now in condition for allowance. Such action is requested. If the examiner believes there is any matter which prevents allowance of the present application, it is requested that the undersigned be

contacted to arrange for an interview which may expedite prosecution.

Respectfully submitted,



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I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office  
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